UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/736,878	12/14/2000	Philip J. Ellerbrock	38190/206960	7632

826 7590 07/13/2004

ALSTON & BIRD LLP
BANK OF AMERICA PLAZA
101 SOUTH TRYON STREET, SUITE 4000
CHARLOTTE, NC 28280-4000

EXAMINER	
WON, MICHAEL YOUNG	
ART UNIT	**PAPER NUMBER**
2155	9

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/736,878	ELLERBROCK ET AL.	
	Examiner	Art Unit	
	Michael Y Won	2155	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6-9*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1-37, drawn to Computer-to-computer transfer regulating, classified in class 709, subclass 232.

   II. Claims 38-42, drawn to Computer network monitoring, classified in class 709, subclass 224.

2. Because these inventions are distinct and thus have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct, the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Andrew T. Spence (Reg. No. 45,699) on July 1, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-37. Applicant in replying to this Office action must make affirmation of this election. Claims 38-42 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Claims 1-37 have been examined and are pending with this action.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, 10, 12, 36 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Barr (US 4,763,357 A).

INDEPENDENT:

As per claim 1, Barr teaches of a network controller for digitally directing communications with a plurality of remote devices via a common bus, the network controller comprising: a transmitter (see col.1, lines 68 and col.2, lines 29-32) for digitally transmitting messages via the common bus (see Fig.1); a receiver (see col.1, lines 68 and col.2, lines 29-32) for receiving digital messages from the common bus (see Fig.1); and a clock for providing clock signals (see col.6, lines 6-10) to both (see col.1, lines 39-44 and col.2, lines 29-32) said transmitter and said receiver, wherein both (see col.1, lines 39-44 and col.2, lines 29-32) said transmitter and receiver are capable of selectively operating in either mode selected from the group consisting of a synchronous mode and an asynchronous mode (see col.2, lines 3-15 and col.7, lines 8-22), wherein said transmitter transmits both messages and the clock signals via the

common bus in the synchronous mode (inherent: see col.2, lines 29-32), and wherein said transmitter transmits messages at a predetermined bit rate (see col.5, line 65) without any accompanying clock signals via the common bus in the asynchronous mode (inherent: see col.2, lines 11-12 and col.7, lines 10-14: "standard asynchronous START/STOP type protocol").

As per claim 10, Barr teaches of a network controller for digitally directing communications with a plurality of remote devices via a common bus, the network controller comprising: a transmitter (see col.1, lines 68 and col.2, lines 29-32) for transmitting digital messages to the plurality of remote devices via the common bus at a predetermined bit rate (see col.5, line 65), said transmitter being capable of altering the predetermined bit rate at which messages are transmitted while communicating with the plurality of remote devices (see col.2, lines 16-19); and a receiver (see col.1, lines 68 and col.2, lines 29-32) for receiving digital messages from the plurality of remote devices via the common bus at the same predetermined bit rate at which messages were previously transmitted to the plurality of remote devices such that said receiver is capable of receiving messages as said transmitter alters the predetermined bit rate (see col.1, lines 39-44; col.2, lines 19-21 & 29-32; and col.9, lines 36-38) without relying upon any clock signals (inherent: see col.2, lines 11-12 and col.7, lines 10-14: "standard asynchronous START/STOP type protocol").

As per claim 36, Barr teaches wherein network controller for digitally directing communications with a plurality of remote devices via a common bus, the network

controller comprising: a transmitter (see col.1, lines 68 and col.2, lines 29-32) for digitally transmitting messages via the common bus (see Fig.1); and a receiver (see col.1, lines 68 and col.2, lines 29-32) for receiving digital messages from the common bus (see Fig.1), wherein the transmitter is capable of transmitting an indefinitely repeating sequence of predetermined messages via the common bus (see col.4, lines 1-10), the receiver is capable of receiving an indefinitely repeating sequence of messages from the common bus (see col.1, lines 39-44; col.2, lines 19-21 & 29-32; and col.9, lines 36-38), and wherein the network controller is capable of altering the predetermined messages as the transmitter transmits messages and the receiver receives messages (see col.2, lines 15-19 and col.4, lines 7-10).

DEPENDENT:

As per claim 2, Barr teaches of further comprising a clock transmitter for digitally transmitting the clock signals via the common bus, wherein said clock transmitter operates at a constant level during the asynchronous mode (see col.6, lines 6-10).

As per claim 3, Barr further teaches wherein said clock receives a baud select command (see col.4, lines 15-22) that defines the predetermined bit rate at which said transmitter will transmit messages in the asynchronous mode (see col.5, lines 46-48 and col.7, lines 8-10).

As per claim 4, Barr further teaches wherein said network controller is capable of commanding a remote device to at least temporarily direct the communication with the other remote devices via the common bus (see col.2, lines 45-51).

As per claim 5, Barr further teaches wherein said receiver asynchronously receives messages from the common bus (see col.9, lines 36-38).

As per claim 6, Barr further teaches wherein the common bus is selected from a group consisting of differential twisted copper wire, coaxial copper wire, fiber-optic cable and single-ended copper wire (see col.1, lines 24-34).

As per claim 7, Barr further teaches wherein the network controller is capable of selectively operating in either communication mode selected from the group consisting of: a half-duplex communication mode and a full-duplex communication mode (see abstract and col.7, lines 36-48).

As per claim 8, Barr further teaches wherein said network controller is capable of acting as a remote device while another, master network controller directs communications with the plurality of remote devices, including the network controller, via the common bus (see abstract: "microprocessor controller" & "plurality of characteristic controllers"; and col.2, lines 45-51).

As per claim 12, Barr further teaches wherein said transmitter receives a baud select command that defines the predetermined bit rate at which the messages will be transmitted (see col.5, lines 46-49).

As per claim 37, Barr teaches of further comprising a clock for providing clock signals to both said transmitter and said receiver, wherein both said transmitter and receiver are capable of selectively operating in either mode selected from the group consisting of a synchronous mode and an asynchronous mode, wherein said transmitter

transmits both the messages and the clock signals via the common bus in the synchronous mode, and wherein said transmitter transmits the messages at a predetermined bit rate without any accompanying clock signals via the common bus in the asynchronous mode (see claim 1 rejection above).

6. Claims 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Knapp et al. (US 4,449,202 A).

As per claim 33, Knapp teaches of a network controller (see col.3, lines 35-38) for digitally directing communications with a plurality of remote devices via a common bus, the bus controller comprising: a transmitter (see Fig.1, and col.3, lines 29-34) for transmitting digital messages via the common bus (see col.3, line 31: "common line"), said transmitter adapted to transmit messages comprising a command and an address of at least one remote device (see Fig.6 and col.1, lines 61-66), said transmitter being further adapted to simultaneously transmit messages to a plurality of remote devices in accordance with a group address comprised of a plurality of bits with each bit associated with a respective group, thereby enabling said transmitter to direct a message to a group of remote devices by setting the respective bit of the group address (see col.14, lines 44-51); and a receiver for receiving digital messages from the common bus (Fig.1, and col.3, lines 29-34).

As per claim 34, Knapp further teaches wherein said transmitter is also adapted to transmit messages to individual remote devices in accordance with a unique logical addresses assigned to the plurality of remote devices (see col.14, lines 44-51).

As per claim 35, Knapp further teaches wherein said transmitter is also adapted to transmit messages to all of the plurality of remote addresses in accordance with a global address (see col.14, lines 44-51).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 13-20, 22-29, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barr (US 4,763,357 A) in view of Nelson et al. (US 4,587,651 A).

INDEPENDENT:

As per claim 13, Barr teaches a method for digitally communicating between a network controller and a plurality of remote devices via a common bus, the method comprising: configuring the controller based upon a command protocol according to which the plurality of remote devices are capable of communicating (see col.1, lines 58-62); and transmitting messages between the bus controller and the plurality of remote

devices according to the same command protocol with which the plurality of remote devices are capable of communicating (see col.1, lines 39-44; col.2, lines 29-32; and col.9, lines 36-38).

Barr does not explicitly teach wherein the plurality of remote devices are capable of communicating according to a command protocol selected from the group consisting of Manchester encoding and a Universal Asynchronous Receiver Transmitter (UART) protocol. Nelson teaches that devices are capable of communicating according to a command protocol selected from the group consisting of Manchester encoding (see col.22, lines 53-55) and a Universal Asynchronous Receiver Transmitter (UART) protocol (see col.28, lines 18-28 & 38-45).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Nelson with the system of Barr to implement devices communicating according to a command protocol selected from a group consisting of Manchester encoding within the digitally communicating method because Manchester encoding allows simple synchronization with the sender and the receiver and Barr teaches that "complete synchronization between the sending and receiving units during the transmission process is provided" (see col.2, lines 19-21).

Further more, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Nelson with the system of Barr to implement devices communicating according to a command protocol selected from a group consisting Universal Asynchronous Receiver Transmitter (UART) protocol

within the digitally communicating method because UART's provide a means for parallel data (ordinary computer data) to be transmitted serially (bus) thus negating the implementation for additional specialized hardware and therefore decreasing cost.

As per claim 24, Barr teaches of a network controller for digitally directing communications with a plurality of remote devices via a common bus, the network controller comprising: a transmitter (see col.1, lines 68 and col.2, lines 29-32) for transmitting digital messages via the common bus (see Fig.1); a receiver (see col.1, lines 68 and col.2, lines 29-32) for receiving digital messages from the common bus (see Fig.1); and a clock for providing clock signals (see col.6, lines 6-10) to both (see col.1, lines 39-44 and col.2, lines 29-32) said transmitter and said receiver, wherein both (see col.1, lines 39-44 and col.2, lines 29-32), wherein said transmitter and receiver are responsive to a command protocol select command that identifies the command protocol according to which the plurality of remote devices are capable of communicating such that said transmitter and receiver thereafter transmit and receive messages, respectively, in accordance with the command protocol identified by the protocol select command (see col.1, lines 58-62 and col.2, lines 22-39).

Barr does not explicitly teach wherein said transmitter and receiver are capable of selectively operating in accordance with any command protocol selected from the group consisting of Manchester encoding and Universal Asynchronous Receiver Transmitter (UART) protocol. Nelson teaches of transmitter and receiver capable of selectively operating in accordance with any command protocol selected from the group

consisting of Manchester encoding and Universal Asynchronous Receiver Transmitter (UART) protocol . (See claim 13 above for motivation to combine)

DEPENDENT:

As per claims 14 and 25, Barr further teaches wherein transmitting messages comprises transmitting messages according to the Manchester encoding command protocol if the plurality of remote devices are capable of communicating according to the Manchester encoding command protocol, and wherein transmitting messages according to the Manchester encoding command protocol comprises transmitting messages according to a mode selected from the group consisting of a synchronous mode and an asynchronous mode (see claim 13 rejection above; col.1, lines 39-44; and col.2, lines 22-25).

As per claims 15 and 26, Barr further teaches wherein transmitting messages in the synchronous mode comprises transmitting messages while concurrently transmitting a clock signal from the network controller to the plurality of remote devices via a common clock transmitter, and wherein transmitting messages in the asynchronous mode comprises transmitting messages at a predetermined bit rate without transmitting a clock signal (see claim 1 rejection above).

As per claim 16, Barr further teaches wherein the messages comprise at least one message pulse, wherein transmitting messages according to the Manchester encoding command protocol comprises transmitting messages in the asynchronous

mode, and further comprising synchronizing the messages using an edge of the message pulse (see claim 13 rejection above and col.8, lines 46-49).

As per claims 17 and 27, Barr further teaches wherein transmitting messages comprises transmitting messages according to the Manchester encoding command protocol if the plurality of remote devices are capable of communicating according to the Manchester encoding command protocol (see claim 14 rejection above), and wherein transmitting messages according to the Manchester encoding protocol comprises transmitting messages comprised of a plurality of bits, each having a value defined by a transition between first and second states (see col.2, lines 15-19; col.6, lines 16-22; and col.11, lines 50-55).

As per claims 18 and 28, Barr further teaches wherein transmitting messages comprises transmitting messages according to the Manchester encoding command protocol if the plurality of remote devices are capable of communicating according to the Manchester encoding command protocol (see claim 14 rejection above), and wherein transmitting messages according to the Manchester encoding command protocol comprises transmitting messages comprised of a sync portion, a message body, and a parity flag (see Fig.2 and 3).

As per claim 19, Barr further teaches wherein transmitting messages according to the Manchester encoding command protocol comprises transmitting messages comprised of a sync portion, a message body including an error flag bit, and a parity flag (see Fig.2, and Fig.3).

As per claims 20 and 29, Barr further teaches wherein transmitting messages comprises transmitting messages according to the UART command protocol if the plurality of remote devices are capable of communicating according to the UART command protocol (see claim 13 rejection above; col.1, lines 39-44; and col.2, lines 22-25), and wherein transmitting messages according to the UART protocol comprises transmitting messages at a predetermined bit rate (see col.5, lines 46-49). Barr does not explicitly teach of transmitting according to a non-return-to-zero (NRZ) bit format. Nelson teaches of transmitting according to a non-return-to-zero (NRZ) bit format (see col.23, lines 2-27). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Nelson with the system of Barr by implementing transmitting according to a non-return-to-zero (NRZ) bit format within the digitally communicating method because Nelson teaches that by NRZ in combination of an enable signal allows data rates to be modified to provide various speeds and Barr teaches of regulating transmission speeds (see col.6, lines 6-40).

As per claim 22, Barr teaches of further comprising receiving a command protocol select command at the controller such that the subsequent configuration of the controller is based upon the command protocol select command (see abstract; col.3, lines 48-55; and col.4, lines 19-22).

As per claims 23 and 32, Barr further teaches wherein the network controller is capable of selectively operating in either communication mode selected from the group

consisting of: a half-duplex communication mode and a full-duplex communication mode (see abstract and col.7, lines 36-48).

As per claim 31, Barr further teaches wherein the common bus is selected from a group consisting of differential twisted copper wire, coaxial copper wire, fiber-optic cable and single-ended copper wire (see col.1, lines 24-34).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barr (US 4,763,357 A) in view of Gulick (US 6,195,749 A)

As per claim 9, Barr does not explicitly teaches wherein said network controller is capable of interacting with a host computer having stack memory and random access memory (RAM), wherein when said network controller is acting as a remote device, the master network controller is capable of selectively accessing either type of memory selected from the group consisting of the stack of sequential memory and the RAM. Gulick teaches of a network controller that is capable of interacting with a host computer having stack memory and random access memory (RAM), wherein when said network controller is acting as a remote device, the master network controller is capable of selectively accessing either type of memory selected from the group consisting of the stack of sequential memory and the RAM (see col.1, line 61 to col.2, line 11). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Gulick within the system of Barr by implementing controllers interacting with either type of memory selected from the

group consisting of the stack of sequential memory and the RAM within the digitally directing network controller apparatus because Gulick teaches that at power up or system reset, the lack of memory makes writing BIOS codes more difficult when at the same time the BIOS codes are demanded to perform more functions, therefore such an implementation allows for increase in registers to be used as "a stack or scratchpad memory" (see col.1, lines 32-54).

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barr (US 4,763,357 A) in view of

As per claim 11, Barr further teaches wherein said transmitter transmits a message to the at least one remote device at an altered bit rate following alteration of the predetermined bit rate (see col.2, lines 16-19), however, Barr does not explicitly teach of an example message. Marino teaches of an example message (see col.1, lines 16-25). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Marino within the system of Barr by implementing an example within the digitally directing network controller apparatus because such an implementation allows receiving device to know when a change has occurred or is about to occur thereby further synchronizing the sent and the received data.

10. Claims 21 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barr (US 4,763,357 A) and Nelson et al. (US 4,587,651 A), and further in view of Duncanson et al. (US 4,700,358 A).

As per claims 21 and 30, Barr further teaches wherein transmitting messages comprises transmitting messages according to the UART command protocol if the plurality of remote devices are capable of communicating according to the UART command protocol (see claim 13 rejection above; col.1, lines 39-44; and col.2, lines 22-25), however Barr does not explicitly teach wherein transmitting messages according to the UART command protocol comprises transmitting an idle pattern to reset the plurality of remote devices prior to transmitting each message. Duncanson teaches wherein transmitting messages according to the UART command protocol comprises transmitting an idle pattern to reset the plurality of remote devices prior to transmitting each message (see col.15, lines 37-50). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to employ the teachings of Duncanson within the system of Barr and Nelson by implementing transmitting an idle pattern to reset the plurality of remote devices prior to transmitting each message within the digitally communicating method and apparatus because this notifies the receiving end that the transmitter has no data to send and further notifies that any new messages is a new message, therefore further synchronization between the transmitter and the receiver.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Y Won whose telephone number is 703-605-4241. The examiner can normally be reached on M-Th: 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hosain T Alam can be reached on 703-308-6662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael Y Won

July 6, 2004

HOSAIN ALAM
SUPERVISORY PATENT EXAMINER